

IN THE CLAIMS

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A filter device, comprising:
 - a reference signal generating source that generates a reference signal;
 - a frequency divider that divides the reference signal so as to output a divided signal;
 - a reference filter that receives the divided signal as an input signal;
 - a phase difference detector that receives an output signal of the reference filter and the divided signal from the frequency divider as input signals and outputs a signal having a duty ratio corresponding to a phase difference generated by the reference filter;
 - a counter that receives the signal outputted by the phase difference detector and the reference signal as input signals and counts the duty ratio corresponding to the phase difference generated by the reference filter;
 - a decoder that decodes an output signal of the counter so as to output a control signal for correcting variations based on an output signal of the counter;
 - a register that holds the control signal outputted from the decoder and outputs the control signal; and
 - a main filter that performs filtering processing with a cut-off frequency controlled according to the control signal outputted from the register.

2. (Previously Presented) A filter device, comprising:
 - a main filter that performs filtering processing with a cut-off frequency that can be controlled by adjusting a constant or a coefficient related to a constituent element using a control signal provided from an exterior;
 - a reference filter that passes a signal having a constant period and outputs the signal, the signal being provided from the exterior;

a phase difference detecting circuit that detects a phase difference between an output signal of the reference filter and the signal having the constant period and outputs the phase difference; and

a register that holds an output signal of the phase difference detecting circuit, wherein the main filter is controlled using an output signal of the register, and the reference filter or the phase difference detecting circuit is halted according to a lapse of a predetermined period of time.

3. (Previously Presented) The filter device according to claim 2, wherein the predetermined period of time starts in synchronization with a point in time at which the output signal of the phase difference detecting circuit is held in the register.

4. (Previously Presented) The filter device according to claim 2, wherein the phase difference detecting circuit outputs a signal having a duty ratio corresponding to the phase difference.

5. (Previously Presented) The filter device according to claim 2, wherein the main filter and the reference filter are formed of an analog filter.

6. (Previously Presented) The filter device according to claim 2, wherein a cut-off frequency of the main filter is allowed to vary using the output signal of the register.

7. (Previously Presented) The filter device according to claim 2, which is installed in a semiconductor integrated circuit.